

CLAIMS

1. A woven wire cloth screen in which at least one fine mesh cloth overlies a coarser mesh backing cloth and an additional coarser mesh cloth is secured over the fine mesh cloth, whose mesh and wire size at least are selected so as in general to prevent relatively large abrasive particles from making contact with the fine mesh cloth.
2. A screen as claimed in claim 1 wherein the tension in wires making up one cloth is different from the tension in the wires making up at least one of the other cloths.
3. A screen as claimed in claim 2 wherein a different tension exists in the wires making up each of the cloths.
4. A screen as claimed in claim 1 wherein the tension in the wires of each of the cloths is the same.
5. A screen as claimed in claim 1 wherein the tension in the additional coarse mesh cloth is greater than that in the fine mesh cloth(s).
6. A screen as claimed in claim 5 wherein the tension in the additional coarse mesh cloth is approximately twice the tension in the fine mesh cloths.
7. A screen as claimed in any of claims 1 to 6 wherein two fine mesh cloths overlie the backing cloth so that one fine mesh cloth is sandwiched between the upper fine mesh cloth and the backing cloth, and the mesh size of the cloth which is so sandwiched is very close to the mesh size of the said upper fine mesh cloth, and in use assists in de-blinding the upper cloth due to relative vibrational movement between it and the lower fine mesh cloth, and the additional coarser mesh cloth overlies the upper fine mesh cloth.

8. A screen as claimed in any of claims 1 to 7 wherein the additional cloth has rectangular mesh openings.
9. A screen as claimed in claim 8 wherein the rectangular openings in the weave are twice as long in one direction as in the other.
10. A screen as claimed in claim 8 or 9 wherein the larger dimensions of the openings in the weave run parallel to the direction in which separated solids migrate over the surface of the screen in use.
11. A screen as claimed in any of claims 1 to 10 wherein the cloths are stretched over and bonded to a rigid frame.
12. A screen as claimed in claim 11 wherein the rigid frame is rectangular.
13. A screen as claimed in claim 12 which in use is arranged so that the longer dimension of the screen is parallel to the direction in which separated solids migrate over the screen.
14. A screen as claimed in any of claims 8 to 13 wherein the additional cloth is fitted to the frame so that the larger dimensions of the openings in the weave are parallel to the longer edges of the frame.
15. A screen as claimed in claim 1 having a single fine mesh cloth sandwiched between backing cloth and overlying additional coarse mesh cloth in which the backing cloth is 30# x 0.280mm diameter S/S wire, the fine mesh cloth is 180# x 0.030mm diameter S/S wire and the additional top cloth is 30# x 60# x 0.160mm diameter S/S wire.
16. A screen as claimed in claim 7 wherein the backing cloth is 30# x 0.280mm diameter S/S wire, the upper fine mesh is 180# x 0.030mm diameter S/S wire, the lower fine

mesh is 160# x 0.036mm diameter S/S wire, and the additional top cloth is 30# x 60# x 0.160mm diameter S/S wire.

17. A method of making a screen as claimed in claim 1 wherein the cloths are in turn laid over a rigid frame to which they are to be bonded and the tension in the wire mesh cloths is achieved using pneumatically powered rams acting on clamps which grip the edges of the cloths, wherein all the rams are of the same size and different tensions are imparted to the cloths by supplying air at differing pressures to the rams acting on the different cloths.
18. A method as claimed in claim 17 when employed to make a screen as claimed in claim 1 in which the pressures applied to the three sets of rams are in the following ratios, backing mesh rams 2.0, fine mesh rams 1.0, and additional top mesh rams 1.9.
19. A method as claimed in claim 17 when employed to make a screen as claimed in claim 7 in which the pressures applied to the rams are in the following ratios, backing mesh rams 2.0, lower fine mesh rams 1.0, upper fine mesh rams 1.0, and additional top mesh rams 1.9.
20. A method as claimed in claim 19 wherein the two fine mesh cloths are clamped and tensioned together, using one set of clamps and rams.
21. A method of making a woven wire cloth screen which will withstand highly abrasive large particles such as obtained when drilling through Utsira sand, in which a support frame is located in a jig, a coarse backing cloth is stretched over the frame and secured between clamping jaws along all four edges and then tensioned by moving all the clamps relatively outwardly by pneumatic rams, similarly stretching a fine mesh wirecloth over the first cloth and similarly tensioning it by means of a second set of clamps and rams, similarly stretching an additional coarse mesh cloth over the fine mesh cloth and tensioning it by means of a third set of clamps and rams, thereafter securing the cloths to the support frame under pressure, releasing the pressure, opening

the clamping jaws, trimming surplus wirecloth back to the frame and removing the finished screen from the jig.

22. A method as claimed in claim 21 wherein a second fine mesh cloth is laid over the first fine mesh cloth before the top coarse cloth is applied.
23. A method as claimed in claim 22 wherein the two fine mesh cloths are clamped using the same set of jaws and rams.
24. A screen as claimed in any of claims 1 to 16 when fitted to and used to sift drilling mud recovered from a sea-bed drilling operation progressing through sub-sea strata composed of Utsira sand.